

CLAIMS LISTING:

1. (Currently amended) A liquid fuel rocket engine member (10) comprising: a load bearing wall structure (11, 14) comprising a plurality of cooling channels (11) for handling a coolant flow, wherein the load bearing wall structure (11,14) comprises a curved wall (14), and wherein a wall of each of said cooling channels is attached to said curved wall; and each of the cooling channels (11) having a flow guiding surface (15,16,17,19) extending along the length of the cooling channel at an angle of between 1° and 50° to the cooling channel axis and thereby providing the axial coolant flow with an added radial directional flow component.
2. (Previously Presented) A liquid fuel rocket engine member (10) comprising: a load bearing wall structure (11, 14) comprising a plurality of cooling channels (11) for handling a coolant flow, wherein the load bearing wall structure (11,14) comprises a curved wall (14), and wherein a wall of each of said cooling channels is attached to said curved wall; and each of the cooling channels (11) having a flow guiding surface (15,16,17,19) extending at an angle to the cooling channel axis and thereby providing the axial coolant flow with an added radial directional flow component, wherein the flow guiding surface (15) is incorporated into the channel wall (18).
3. (Original) The liquid fuel rocket engine member as recited in claim 2, further comprising: the flow guiding surface comprising a plurality of grooves in the channel wall (18).
4. (Original) The liquid fuel rocket engine member as recited in claim 2, further comprising: the flow guiding surface (15) comprising a plurality of ribs protruding (15) from the channel wall (18).
5. (Original) The liquid fuel rocket engine member as recited in claim 1, further comprising: the flow guiding surface (16,17,19) comprising a separate structure inside the cooling channel (11).

6. (Previously Presented) A liquid fuel rocket engine member (10) comprising: a load bearing wall structure (11, 14) comprising a plurality of cooling channels (11) for handling a coolant flow, wherein the load bearing wall structure (11,14) comprises a curved wall (14), and wherein a wall of each of said cooling channels is attached to said curved wall; and each of the cooling channels (11) having a flow guiding surface (15,16,17,19) extending at an angle to the cooling channel axis and thereby providing the axial coolant flow with an added radial directional flow component, said flow guiding surface (16,17,19) comprising a separate structure inside the cooling channel (11) and said separate structure comprising a helical spiral (19).

7. (Previously Presented) A liquid fuel rocket engine member (10) comprising: a load bearing wall structure (11, 14) comprising a plurality of cooling channels (11) for handling a coolant flow, wherein the load bearing wall structure (11,14) comprises a curved wall (14), and wherein a wall of each of said cooling channels is attached to said curved wall; and each of the cooling channels (11) having a flow guiding surface (15,16,17,19) extending at an angle to the cooling channel axis and thereby providing the axial coolant flow with an added radial directional flow component, said flow guiding surface (16,17,19) comprising a separate structure inside the cooling channel (11) and said separate structure having a threaded screw (16, 17).

8. (Previously presented) A method for manufacturing a liquid fuel rocket engine member (10) having a load bearing wall structure (11, 14) comprising a plurality of cooling channels (11) for handling a coolant flow, said method comprising:

shaping a sheet metal surface to provide [a]flow guiding surface (15); folding the sheet metal into cooling channels (11); and

forming said wall structure by at least said folded sheet metals by attaching said folded sheet metals to a wall (14) and thereby forming said wall structure.

9. (Previously presented) The method as recited in claim 8, further comprising: shaping the sheet metal surface by stamping grooves into the surface.

10. (Previously presented) The method as recited in claim 8, further comprising: shaping the sheet metal surface by stamping to form protruding ribs (15) on the surface.

11. (Previously presented) The liquid fuel rocket engine member as recited in claim 1 wherein said angle is between 5° and 50°.

12. (Previously presented) The liquid fuel rocket engine member as recited in claim 1 wherein said angle is between 10° and 20°.

13. (New) A liquid fuel rocket engine member (10) comprising: a load bearing wall structure (11, 14) comprising a plurality of cooling channels (11) for handling a coolant flow, wherein the load bearing wall structure (11,14) comprises a curved wall (14), and wherein a wall of each of said cooling channels is attached to said curved wall; and each of the cooling channels (11) having a flow guiding surface (15,16,17,19) extending along the length of the cooling channel at an angle to the cooling channel axis and thereby providing the axial coolant flow with an added radial directional flow component.

14. (New) The liquid fuel rocket engine member as recited in claim 13, further comprising: the flow guiding surface (15) being incorporated into the channel wall (18).

15. (New) The liquid fuel rocket engine member as recited in claim 14, further comprising: the flow guiding surface comprising a plurality of grooves in the channel wall (18).

16. (New) The liquid fuel rocket engine member as recited in claim 14, further comprising: the flow guiding surface (15) comprising a plurality of ribs protruding (15) from the channel wall (18).

17. (New) The liquid fuel rocket engine member as recited in claim 1, further comprising: the flow guiding surface (16,17,19) comprising a separate structure inside the cooling channel (11).

18. (New) The liquid fuel rocket engine member as recited in claim 17, further comprising: the structure comprising a helical spiral (19).

19. (New) The liquid fuel rocket engine member as recited in claim 17, further comprising: the structure having a threaded screw (16, 17).